

### ABSTRACT

(Object) To facilitate the formation of a porous insulating layer.

(Solving Means) A porous insulating layer-forming apparatus 10 includes a solution-applying portion 20, a solidified layer-forming portion 50, a vacuum drying  
5 portion 60, a firing portion 70, and an airtight treatment portion 80. The solution-applying portion 20 applies a solution 22 in which an insulating material is dissolved, onto a workpiece 1. In the solidified layer-forming portion 50, a cooling plate 54 cools the solution 22 applied onto the workpiece 1 to a temperature less than or equal to the melting point of the solvent in the solution to yield a solidified  
10 layer 68. In the vacuum drying portion 60, a decompression chamber 62 is decompressed by a vacuum pump 66 to vaporize the solvent in the solidified layer 68, thereby changing the solidified layer 68 into a porous solidified layer 76. In the firing portion 70, the porous solidified layer 76 is hardened by firing on a hot plate 74 to yield a porous insulating layer 86. In the airtight portion 80, heat rays  
15 emitted from a flushing device 84 instantaneously irradiate the surface of the porous insulating layer 86 to melt the surface to cover the pores in the surface, thereby giving the porous insulating layer 86 airtightness.